Paper No. 17

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Ex parte JEFFREY D. BIRDSLEY, MICHAEL R. BRUCE, RAMA R. GORUGANTHU, BRENNAN V. DAVIS, and ROSALINDA M. RING

Appeal No. 2004-0648
Application 09/379,047

ON BRIEF

Before PAK, KRATZ, and PAWLIKOWSKI, Administrative Patent Judges.

PAWLIKOWSKI, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134 from the examiner's final rejection of claims 1, 2, 3, and 24. A copy of these claims is set forth in the attached appendix.

Claims 1-3 and 24 stand rejected under 35 U.S.C. §102(e) as being anticipated by Winer.

The examiner relies upon the following reference as evidence of unpatentability:

Winer	5,963,781	October 5, 1999

OPINION

On page 3 of the brief, appellants argue that claims 1 and 24 are directed to detecting photon emissions from an integrated circuit chip. Appellants argue that Winer does not teach this aspect of the claim. Appellants argue that Winer teaches detecting internal current induced by light at a p-n junction within the die under test. Appellants argue that the detection of photocurrent does not correspond to detecting photons or any kind of photon emitted through the substrate.

The examiner disagrees. On page 4 of the answer, the examiner asserts that Winer discloses removing a portion of the substrate in the back side of the semiconductor chip as a function of photons emitted through substrate remaining at the back side and the examiner refers to column 6, lines 34-62 of Winer. The examiner asserts that Winer shows photons entering, and in order to measure the photocurrent, the photons entering must be emitted as is recognized by a person of ordinary skill in the art.

Hence, the critical issue before us is whether Winer discloses, either explicitly or inherently, that photons are emitted through the substrate.

In the instant case, we find that Winer does not explicitly disclose that photons are emitted through the substrate. Winer discloses (column 6, lines 34-55), that a photocurrent is created by photons entering the p-n junction, and the light that gets through generates a photocurrent, and that the photocurrent is proportional to the thickness of substrate 46. Thus by

monitoring this current, the thickness of the substrate 46 is accurately measured.

Because Winer does not explicitly disclose that photons are emitted through the substrate, we next consider whether the examiner has shown that Winer inherently teaches such.

We note that when an examiner relies upon a theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied art. Ex Parte Levy, 17 USQP2d 1461, 1464 (Bd. Pat. App. & Int. 1990). Inherency "may not be established by probabilities or possibilities." The mere fact that a certain thing may result from a given set of circumstances is not sufficient. Ex Parte Skinner, 2 USPQ2d 1788, 1789 (Bd. Pat. App. & Int. 1986). Also, the examiner has the initial burden of providing such evidence or technical reasons. See In re Spada, 911 F.2d 705, 708, 15 USPQ2d 1655, 1657 (Fed. Cir. 1990).

In the instant case, the examiner states that "Winer shows photons entering (Winer, col. 6, lines 34-62) and in order to measure [sic, measured] the photocurrent the photons entering must be emitted as is recognized by a person of ordinary skill in the art". Answer, page 5.

The above conclusion made by the examiner is not supported, by evidence or a technical explanation which reasonably supports a determination that the allegedly inherent characteristic (photons emitted through a substrate) necessarily flows from the teachings of the applied art. Ex Parte Levy, 17 USQP2d 1461, 1464 (Bd. Pat. App. & Int. 1990). Appellants dispute this very issue. See pages 3-4 of the Brief. Because the examiner does not adequately support his conclusion, we cannot affirm the anticipation rejection based upon an inherency theory either.

Accordingly, we reverse the rejection of claims 1-3 and 24 under 35 U.S.C. §102(e) as being anticipated by Winer.

REVERSED

Chung K. Pak Administrative Patent Judge	)	
Peter F. Kratz Administrative Patent Judge	)	BOARD OF PATENT APPEALS AND INTERFERENCES
Beverly A. Pawlikowski Administrative Patent Judge	)	

BAP/cam

APPENDIX

1. A method for removing substrate from a semiconductor chip having a circuit side including active circuitry and a back side including silicon substrate, the method comprising removing a portion of substrate in the back side of the semiconductor chip as a function of photons emitted through substrate remaining at the back side.

2. The method of claim 1, further comprising measuring the photon emission strength by detecting the photons emitted through the remaining substrate.

3. The method of claim 2, further comprising controlling the substrate removal responsive to the measured photon emission strength.

24. A method for removing substrate from a semiconductor chip, the chip having a circuit side and a back side, the back side having silicon substrate, the method comprising:

removing substrate from the back side of the semiconductor chip;

measuring the photon emission strength of the chip; and

controlling the removal of substrate in response to a measured photon emission strength.

CRAWFORD PLLC
1270 Northland Drive
Suite 390
Mendota Heights. MN 55120